



Form No. 3425-809 Rev B

Count on it.

Operator's Manual

100in Rear Discharge Deck

Groundsmaster® 360 Series or Serial Number
313000001 and After Groundsmaster® 7210
Traction Unit

Model No. 31101—Serial No. 403330001 and Up

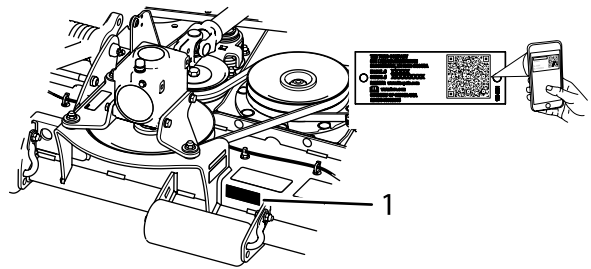


This product complies with all relevant European directives. For details, please see the Declaration of Incorporation (DOI) at the back of this publication.

⚠ WARNING

CALIFORNIA Proposition 65 Warning

Use of this product may cause exposure to chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.



g269755

Figure 1

Model No. _____

Serial No. _____

Introduction

This rotary-blade lawn cutting unit is mounted to a ride-on machine and is intended to be used by professional, hired operators in commercial applications. It is primarily designed for cutting grass on well-maintained lawns in parks, sports fields, and on commercial grounds. Using this product for purposes other than its intended use could prove dangerous to you and bystanders.

Read this information carefully to learn how to operate and maintain your product properly and to avoid injury and product damage. You are responsible for operating the product properly and safely.

Visit www.Toro.com for product safety and operation training materials, accessory information, help finding a dealer, or to register your product.

Whenever you need service, genuine Toro parts, or additional information, contact an Authorized Service Dealer or Toro Customer Service and have the model and serial numbers of your product ready. [Figure 1](#) identifies the location of the model and serial numbers on the product. Write the numbers in the space provided.

Important: With your mobile device, you can scan the QR code on the serial number decal (if equipped) to access warranty, parts, and other product information.

This manual identifies potential hazards and has safety messages identified by the safety-alert symbol ([Figure 2](#)), which signals a hazard that may cause serious injury or death if you do not follow the recommended precautions.



g000502

Figure 2

1. Safety-alert symbol

This manual uses 2 words to highlight information. **Important** calls attention to special mechanical information and **Note** emphasizes general information worthy of special attention.

Contents

Safety	3
General Safety	3
Cutting Unit Safety	3
Safety and Instructional Decals	5
Setup	7
Product Overview	8
Specifications	8
Trailer Dimensions	8
Attachments/Accessories	8
Operation	9
Adjusting the Height of Cut	9
Adjusting the Side Skids	10
Replacing the Skid Plates	10
Adjusting the Rollers	11
Leveling the Mower	11
Folding the Caster Arm	12
Using the Transport Latches	12
Operating Tips	13
Maintenance	14
Recommended Maintenance Schedule(s)	14
Daily Maintenance Checklist	14
Lubrication	15
Servicing the Mower Deck Gearbox	
Lubricant	16
Servicing the Belts	17
Servicing the Bushings in the Caster	
Arms	17
Servicing the Caster Wheels and	
Bearings	18
Servicing the Cutting Blades	18
Adjusting the Deck-Limit Chains	20
Cleaning Under the Cutting Unit	24
Storage	25

Safety

This machine has been designed in accordance with EN ISO 5395:2013 and ANSI B71.4-2017.

General Safety

This product is capable of amputating hands and feet and of throwing objects. Always follow all safety instructions to avoid serious personal injury.

- Read and understand the contents of this *Operator's Manual* before starting the engine.
- Use your full attention while operating the machine. Do not engage in any activity that causes distractions; otherwise, injury or property damage may occur.
- Do not put your hands or feet near moving components of the machine.
- Do not operate the machine without all guards and other safety protective devices in place and working on the machine.
- Keep clear of any discharge opening. Keep bystanders and pets a safe distance away from the machine.
- Keep children out of the operating area. Never allow children to operate the machine.
- Park the machine on a level surface, lower the cutting units, disengage the drives, engage the parking brake (if provided), shut off the engine, and remove the key before leaving the operator's position for any reason.

Improperly using or maintaining this machine can result in injury. To reduce the potential for injury, comply with these safety instructions and always pay attention to the safety-alert symbol, which means Caution, Warning, or Danger—personal safety instruction. Failure to comply with these instructions may result in personal injury or death.

You can find additional safety information where needed throughout this *Operator's Manual*.

Cutting Unit Safety

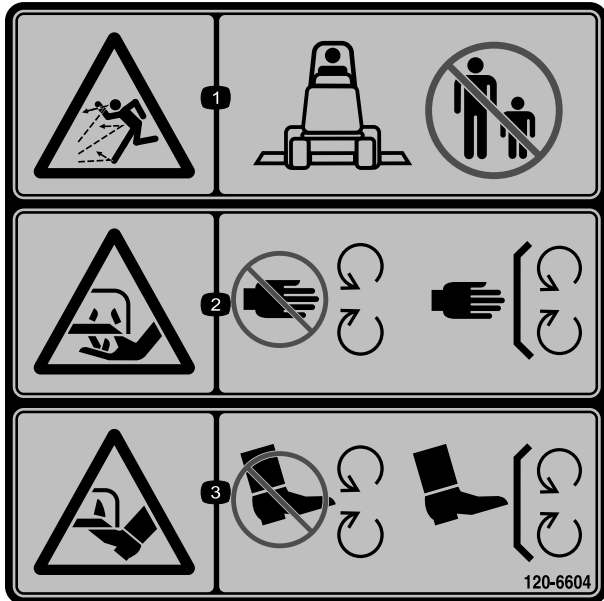
- The cutting unit is only a part of a complete machine when installed on a traction unit. Read the **traction unit *Operator's Manual*** carefully for complete instructions on the safe use of the machine.
- Stop the machine, set the parking brake, remove the key, and wait for all moving parts to stop before inspecting the attachment after striking an object or if there is an abnormal vibration in the machine. Make all necessary repairs before resuming operation.

- Keep all parts in good working condition and all hardware tightened. Replace all worn or damaged decals.
- Use only accessories, attachments, and replacement parts approved by Toro.

Safety and Instructional Decals



Safety decals and instructions are easily visible to the operator and are located near any area of potential danger. Replace any decal that is damaged or missing.



120-6604

decal120-6604

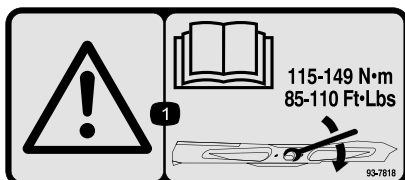
1. Thrown object hazard—keep bystanders away from the machine.
2. Cutting/dismemberment hazard of hand, mower blade—stay away from moving parts, keep all guards and shields in place.
3. Cutting/dismemberment hazard of foot, mower blade—stay away from moving parts, keep all guards and shields in place.



93-6697

decal93-6697

1. Read the *Operator's Manual*.
2. Add SAE 80W-90 (API GL-5) oil every 50 hours.



93-7818

decal93-7818

1. Warning—read the *Operator's Manual* for instructions on torquing the blade bolt/nut to 115 to 149 N·m (85 to 110 ft-lb).



93-6696

decal93-6696

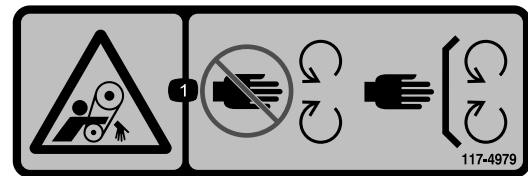
1. Stored energy hazard—read the *Operator's Manual*.



119-6807

decal119-6807

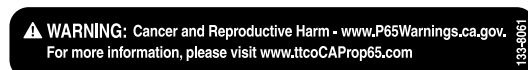
1. Warning—no step



117-4979

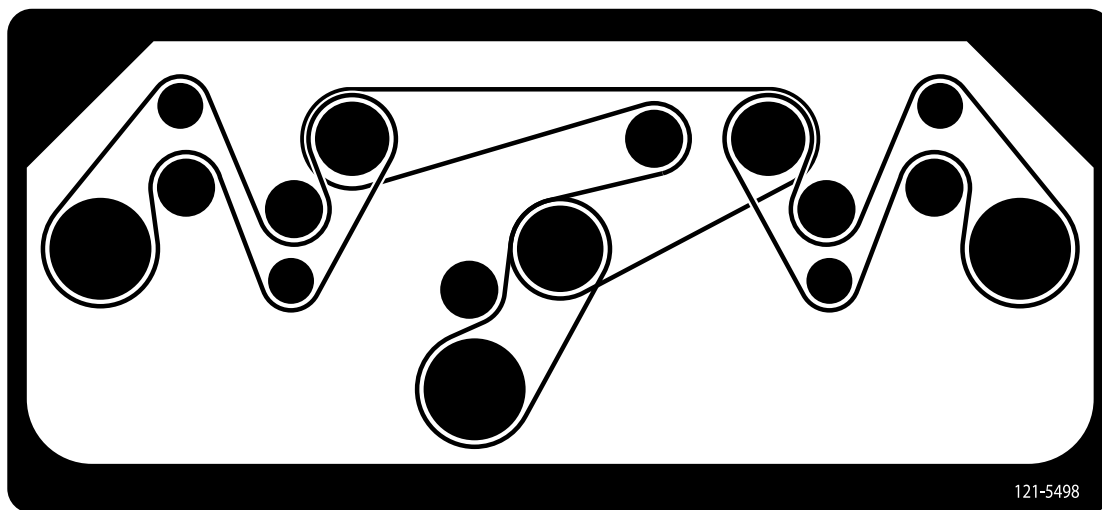
decal117-4979

1. Rotating belt—Keep guard in place



133-8061

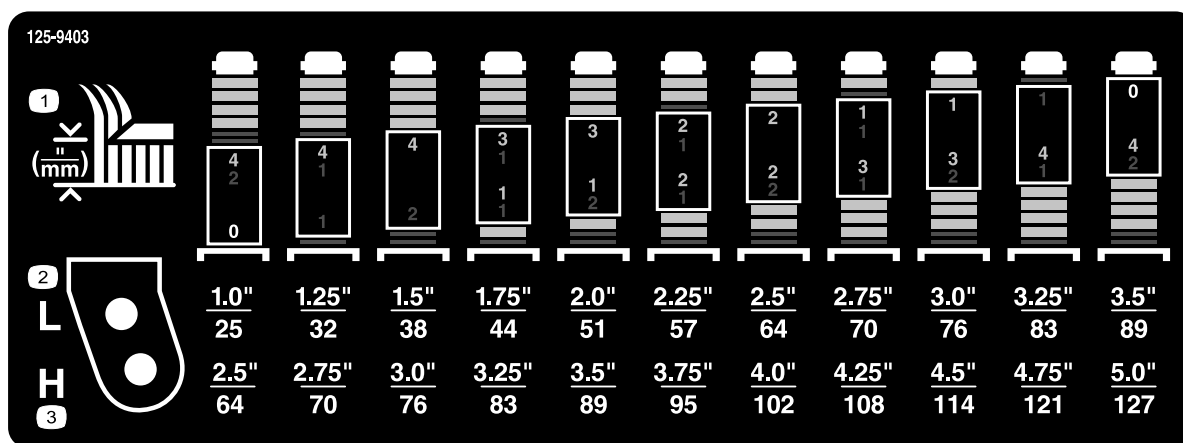
decal133-8061



121-5498

121-5498

decal121-5498



125-9403

decal125-9403

1. Height-of-cut
2. Low

3. High

Setup

Media and Additional Parts

Description	Qty.	Use
Operator's Manual	1	Review the material and save it in an appropriate place.
Parts Catalog	1	Use this catalog to reference part numbers.

⚠ WARNING

If you leave the key in the ignition switch, someone could accidentally start the engine and seriously injure you or other bystanders.

Remove the key from the ignition switch before you perform any maintenance.

⚠ DANGER

If the engine is started and the PTO shaft is allowed to rotate, serious injury could result.

Do not start the engine and engage the PTO switch when the PTO shaft is not connected to the gearbox on the cutting unit.

Note: Determine the left and right sides of the machine from the normal operating position.

Note: Install the appropriate adapter kit before installing the deck. You must use the 100-inch rear-discharge deck with 1 of the following adapter kits:

Adapter Kit, Model 31102 is used for all Groundsmaster® 360 Series 2WD Traction Units, 2013 and before Groundsmaster® 360 Series 4WD Traction Units, and 2014 Groundsmaster® 360 Series Traction units in the following serial ranges:

Model	Serial range
31223	314000101 to 314000104
30536	314000101 to 314000105
30539	314000101 to 314000116

Adapter Kit, Model 31103 is for Groundsmaster® 360 Series 4WD traction units in the following serial ranges:

Model	Serial range
31223	314000105 and up
30539	314000117 and up
All other 4WD models	314000001 and up

Note: You must install Revision J or later of the Toro Diagnostic software in the vehicle controller system to operate the deck as designed.

Adapter Kit, Model 31104 is for Groundsmaster® 7210 traction units in the following serial ranges:

Model	Serial range
All 2013 and up models	313000001 and up

Product Overview

Specifications

Note: Specifications and design are subject to change without notice.

Width of cut	2.54 m (100 inches)
Height of cut	Adjustable from 25 to 127 mm (1 to 5 inches) in 6 mm (1/4 inch) increments
Net weight	358 kg (790 lb)

Trailer Dimensions

Ensure that your trailer or transport vehicle ([Figure 3](#)) has enough room to carry the deck in addition to the traction unit. Refer to [Figure 4](#) for the dimensions of the deck when the wing decks are in the raised position.

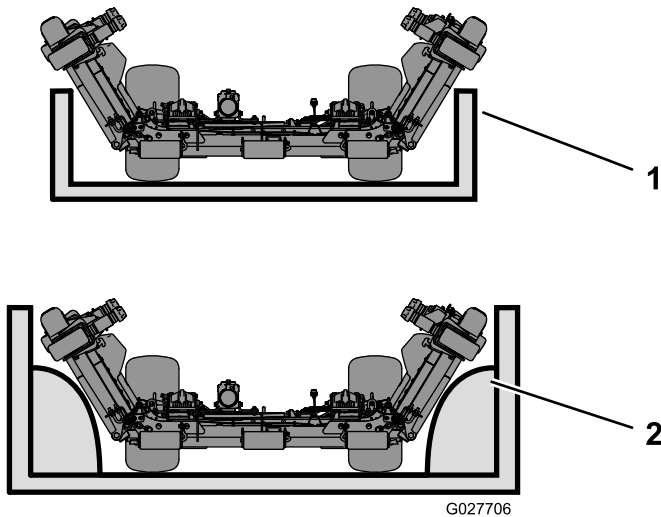


Figure 3

1. Side of trailer 2. Wheel well of trailer

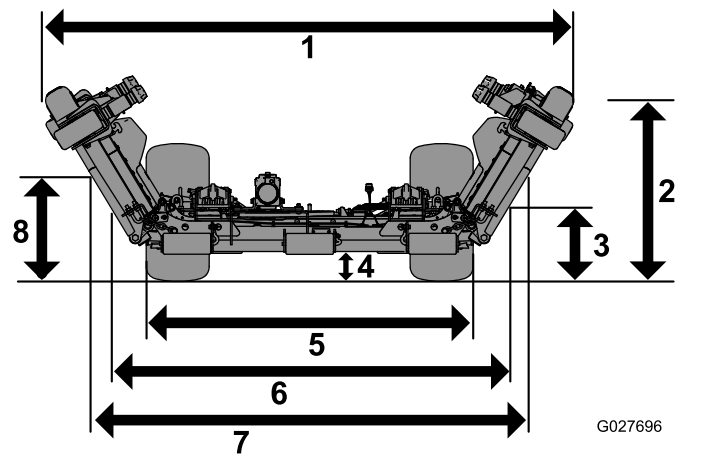


Figure 4

- | | |
|-------------------------|-----------------------------|
| 1. 223.5 cm (88 inches) | 5. 138.4 cm (54-1/2 inches) |
| 2. 76.2 cm (30 inches) | 6. 167.3 cm (65-7/8 inches) |
| 3. 30.5 cm (12 inches) | 7. 185.7 cm (73-1/8 inches) |
| 4. 12.8 cm (5 inches) | 8. 45 cm (18 inches) |

Attachments/Accessories

A selection of Toro approved attachments and accessories is available for use with the machine to enhance and expand its capabilities. Contact your Authorized Service Dealer or Distributor or go to www.Toro.com for a list of all approved attachments and accessories.

To ensure optimum performance and continued safety certification of the machine, use only genuine Toro replacement parts and accessories. Replacement parts and accessories made by other manufacturers could be dangerous, and such use could void the product warranty.

Operation

Note: Determine the left and right sides of the machine from the normal operating position.

⚠ CAUTION

If you leave the key in the ignition switch, someone could accidentally start the engine and seriously injure you or other bystanders.

Remove the key from the ignition before you perform any maintenance.

Adjusting the Height of Cut

The height of cut can be adjusted from 25 to 127 mm (1 to 5 inches) in 6 mm (1/4 inch) increments.

Center Deck

You can change the height of cut on the center deck by moving the stop pin into different hole locations.

1. With the engine running, push back on the mower lift switch until the mower is fully raised and **release the switch immediately**.
2. Rotate the stop pin until the nub on it lines up with the slots in the holes in the height-of-cut bracket and remove it (Figure 5).

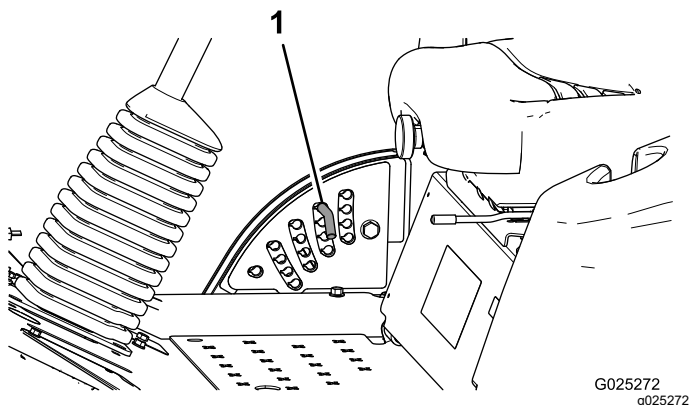


Figure 5

1. Stop pin

3. Select a hole in the height-of-cut bracket corresponding to the height of cut desired, insert the pin, and rotate it down to lock it in place (Figure 5).

Note: There are 4 rows of hole positions (Figure 5). The top row gives you the height of cut listed above the pin. The second row down gives you the height listed plus 6 mm (1/4 inch). The third row down gives you the height listed plus 12 mm (1/2 inch). The bottom row gives you the height listed plus 18 mm (3/4 inch). For

the 127 mm (5 inch) position there is only 1 hole, located in the second row. This does not add 6 mm (1/4 inch) to the 127 mm (5 inch) position.

4. Adjust the anti-scalp rollers and skids as required.

Wing Decks

Adjust the height of cut on the wing decks by positioning the caster wheel axles in the upper or lower holes of the caster forks, adding or removing an equal number of spacers from the caster forks, and securing the height-of-cut collar to the desired holes in the height-of-cut rod.

1. Start the engine and raise the cutting unit off the floor so that you can adjust the height of cut. Shut off the engine, set the parking brake, and remove the key after you raise the cutting unit.
2. Position the caster wheel axles in the same holes in both caster forks. Refer to Figure 6 to determine the correct holes for the setting.

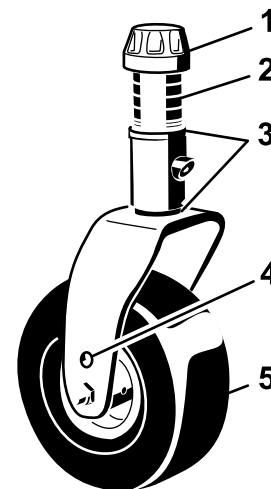


Figure 6

- | | |
|-------------------|------------------------|
| 1. Tensioning cap | 4. Axle mounting holes |
| 2. Spacers | 5. Caster wheel |
| 3. Shims | |

Note: When operating in a 64 mm (2-1/2 inch) cutting height or higher, install the axle bolt in the lower caster fork hole to prevent grass buildup between the wheel and the fork. When operating in a cutting height lower than 64 mm (2-1/2 inch) and there is grass buildup, reverse the machine's direction to pull any clippings away from the wheel/fork area.

3. Remove the tensioning cap from the spindle shaft (Figure 6) and slide the spindle out of the caster arm. Put the 2 shims (3 mm or 1/8 inch) onto the spindle shaft as they were originally installed. These shims are required to achieve a level across the entire width of the cutting

units. Slide the appropriate number of 13 mm (1/2 inch) spacers onto the spindle shaft to get the desired height of cut; then slide the washer onto the shaft.

Note: When using 25 mm (1 inch), 38 mm (1-1/2 inch), or occasionally 51 mm (2 inch) height of cut, move the skids and roller to the highest holes.

4. Secure the adjustment with the tensioning cap.

Adjusting the Side Skids

Mount the skids in the lower position when operating in a 64 mm (2-1/2 inch) or higher cutting height and in the higher position when operating in a cutting height lower than 64 mm (2-1/2 inches).

Note: When the skids become worn, you can switch the skids to the opposite sides of the mower, flipping them over. This allows you to use the skids longer before replacing them.

1. Disengage the PTO and engage the parking brake.
2. Shut off the engine, remove the key, and wait for all moving parts to stop before leaving the operating position.
3. Loosen the screw at the front of each skid (Figure 7).
4. Remove the flange-head bolts and nuts from each skid.
5. Move each skid to the desired position and secure them with the flange-head bolts and nuts (Figure 7).

Note: Use only the top or center sets of holes to adjust the skids. The bottom holes are used when switching sides, at which time they become the top holes on the other side of the mower.

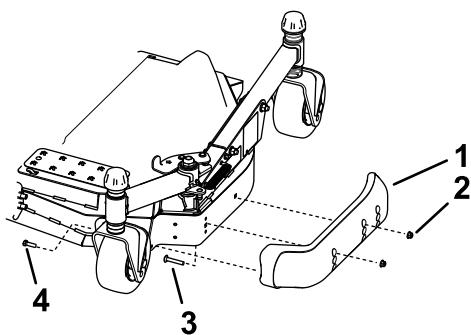


Figure 7

- | | |
|---------|---------------------|
| 1. Skid | 3. Flange-head bolt |
| 2. Nut | 4. Screw |

6. Torque the screw at the front of each skid to 9 to 11 N·m (80 to 100 in-lb).

Replacing the Skid Plates

1. Raise the deck wing and secure the latch pin to the latch handle (Figure 8).

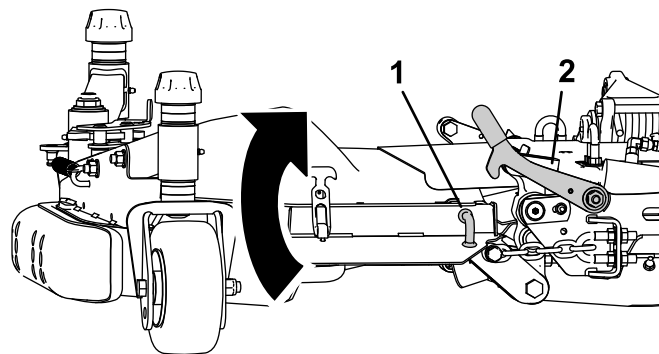


Figure 8

- | | |
|--------------|-----------------|
| 1. Latch pin | 2. Latch handle |
|--------------|-----------------|

2. Remove the fasteners that secure the existing skid plate to the cutting unit (Figure 9).

Note: Discard the existing skid plate and fasteners.

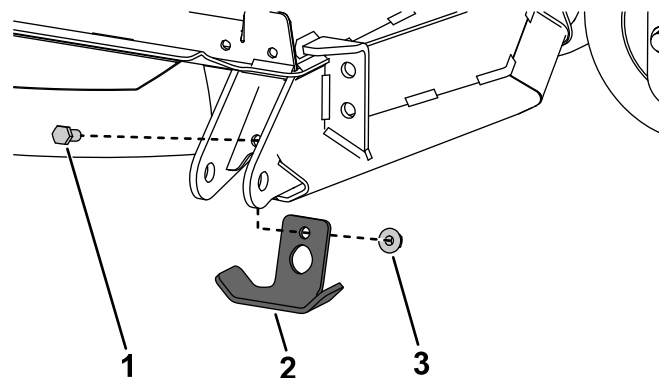


Figure 9

Center deck not shown for clarity

- | | |
|---------------|--------|
| 1. Bolt | 3. Nut |
| 2. Skid plate | |

3. Install the new skid plate; refer to the deck skid kit *Installation Instructions*.

Adjusting the Rollers

Groundsmaster 360 Machines

Mount the rollers in the lower position when operating in height of cuts higher than 64 mm (2-1/2 inches) and in the higher position when operating in height of cuts lower than 64 mm (2-1/2 inches).

1. Disengage the PTO and engage the parking brake.
2. Move the throttle lever to the SLOW position, shut off the engine, remove the key, and wait for all moving parts to stop before leaving the operating position.
3. Raise the front of the machine and support it on jack stands.
4. Remove the fasteners securing each roller on your mower and move the rollers up or down as desired (Figure 10).

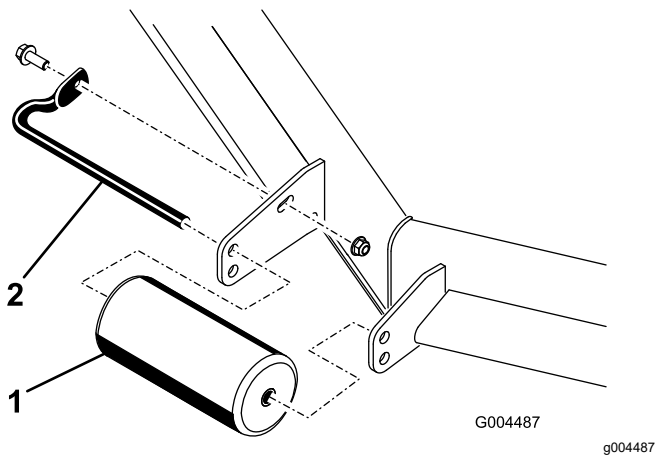


Figure 10

1. Roller
2. Roller shaft

5. Install the fasteners as illustrated.

Leveling the Mower

Note: Leveling tools specific to this cutting unit are available from your authorized Toro distributor.

Leveling Front to Back

Cutting unit pitch is the difference in height of cut from the front of the blade plane to the back of the blade plane. Toro recommends a blade pitch of approximately 8 to 11 mm (5/16 to 7/16 inch). This means that the back of the blade plane is 8 to 11 mm (5/16 to 7/16 inch) higher than the front.

1. Park the machine on a level surface on the shop floor.
2. Set the cutting unit to the desired height of cut, move the throttle lever to the SLOW position,

shut off the engine, engage the parking brake, and remove the key.

3. Rotate the center blade so that it points straight forward.
4. Using a short ruler, measure from the floor to the front tip of the blade.
5. Rotate the same blade tip to the rear and measure from the floor to the tip of the blade at the rear of the mower.
6. Subtract the front dimension from the rear dimension to calculate the blade pitch.
7. Adjust the U-bolt jam nuts (Figure 11) securing the rear deck chains (Figure 12) to the mower deck to raise the rear of the mower so that the blade pitch is set to 8 to 11 mm (5/16 to 7/16 inch).

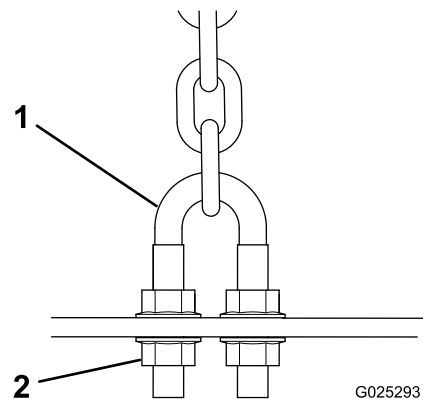


Figure 11

1. U-bolt
2. Jam nut

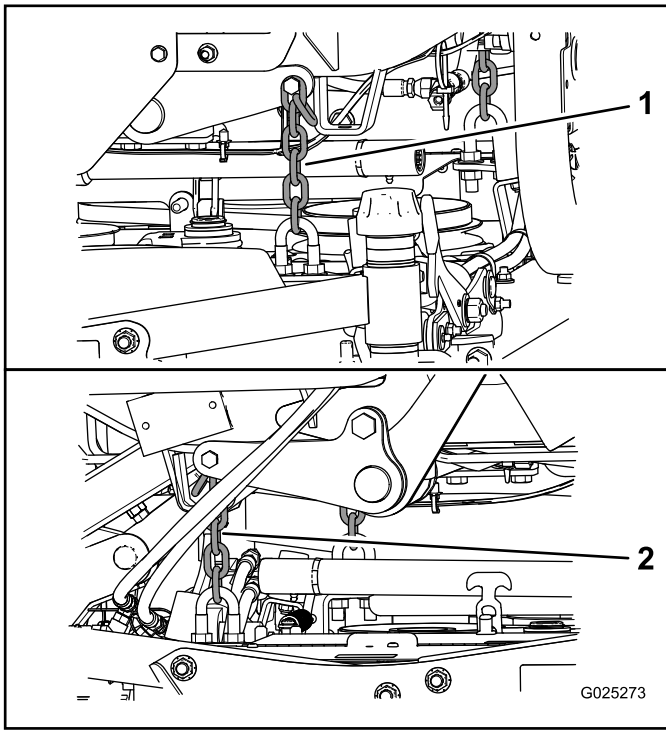


Figure 12

1. Left rear-lift chain
2. Right rear-lift chain

Leveling Side to Side

If the cut is uneven across the mower swath, correct it as follows:

1. Park the machine on a level surface on the shop floor.
2. Set the cutting unit to the desired height of cut, move the throttle lever to the SLOW position, shut off the engine, engage the parking brake, and remove the key.
3. Check and adjust front and rear tractor tire pressure; refer to the traction unit *Operator's Manual*.
4. Check for bent blades.
5. Remove the covers from the top of the cutting units.
6. Rotate the blade on each spindle until the ends face forward and backward.
7. Measure from the floor to the front tip of the cutting edge.
8. Adjust the jam nuts securing the deck chains to the mower deck until the mower deck is level (Figure 12).

Folding the Caster Arm

To gain access to or from the operator area when the wing decks are folded up, release the caster arm latch

(Figure 13) and rotate the caster arm away from the traction unit.

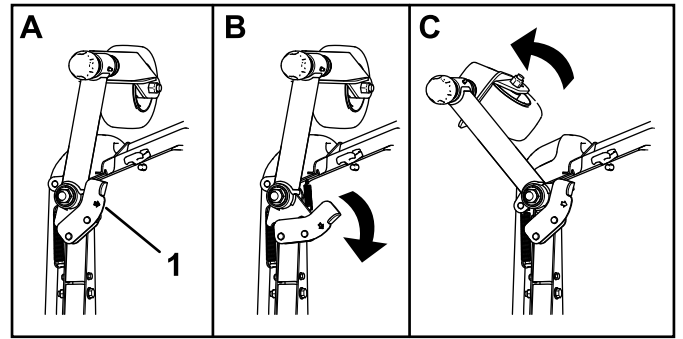


Figure 13

1. Caster-arm latch

Important: Rotate the caster arm back to the machine before mowing.

Using the Transport Latches

Before transporting the machine, raise the wing decks and secure the wing deck transport latches (Figure 14).

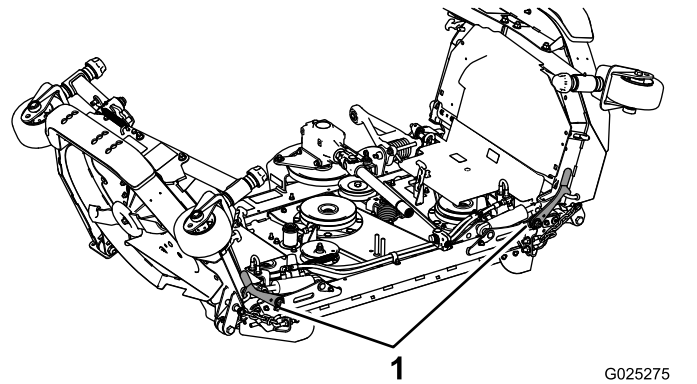


Figure 14

1. Wing deck transport latches

Operating Tips

Using the Fast Throttle Setting and Adjusting the Ground Speed

To maintain enough power for the machine and deck while mowing, operate the engine at the fast throttle position and adjust your ground speed for conditions. Decrease the ground speed as the load on the cutting blades increases, and increase the ground speed as the load on the blades decreases.

Alternating Mowing Direction

Alternate the mowing direction to avoid making ruts in the turf over time. This also helps disperse clippings, which enhances decomposition and fertilization.

Selecting the Cutting Speed

To improve cut quality, use a slower ground speed.

Selecting the Proper Height-of-Cut Setting to Suit Conditions

Remove approximately 25 mm (1 inch) or no more than 1/3 of the grass blade when cutting. In exceptionally lush and dense grass, you may have to slow down the forward speed and/or raise the height of cut to the next higher setting.

Keeping the Mower Clean

Clean clippings and dirt from the underside of the mower after each use. If grass and dirt build up inside the mower, cutting quality will eventually become unsatisfactory.

To reduce the risk of fire hazard, keep the engine, muffler, battery compartment, parking brake, cutting units, and fuel storage compartment free of grass, leaves, or excessive grease. Clean up any spilled oil or fuel.

Use compressed air or a leaf blower to clean the belt drive area. Install any removed guards or covers after cleaning.

Maintaining the Blade

Maintain a sharp blade throughout the cutting season because a sharp blade cuts cleanly without tearing or shredding the grass blades. Tearing and shredding, which turns grass brown at the edges, slows growth and increases the chance of disease. Check the blades daily for sharpness, and for any wear or

damage. Sharpen the blades as necessary. If a blade is damaged or worn, replace it immediately with a genuine Toro replacement blade. Refer to [Servicing the Cutting Blades \(page 18\)](#).

Maintenance

Recommended Maintenance Schedule(s)

Maintenance Service Interval	Maintenance Procedure
After the first 2 hours	Tighten the caster wheel nuts.
After the first 10 hours	- Tighten the caster wheel nuts. - Torque the blade bolts.
After the first 50 hours	Change the mower deck gearbox lubricant.
Before each use or daily	- Lubricate the caster arm bushings. - Lubricate the caster wheel bearings. - Check the blades.
After each use	Clean the cutting unit.
Every 50 hours	- Lubricate the grease fittings. Lubricate the grease fittings immediately after every washing. - Check the belts. - Clean under the cutting unit belt covers. - Tighten the caster wheel nuts. - Torque the blade bolts.
Every 150 hours	Check the lubricant in the mower deck gearbox.
Every 400 hours	Change the mower deck gearbox lubricant.

Daily Maintenance Checklist

Duplicate this page for routine use.

Maintenance Check Item	For the week of:						
	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Sun.
Check Grass Deflector in Down Position (if applicable)							
Check Tire Pressure							
Check Condition of Blades							
Lubricate All Grease Fittings ¹							
Touch-up Damaged Paint							
1. Immediately after every washing, regardless of the interval listed.							

Notation for Areas of Concern		
Inspection performed by:		
Item	Date	Information

⚠ CAUTION

If you leave the key in the ignition switch, someone could accidentally start the engine and seriously injure you or other bystanders.

Remove the key from the ignition switch before you perform any maintenance.

⚠ WARNING

If you raise the machine using only a jack to support it while you work under the mower deck, the jack could tip, causing the mower deck to fall, crushing you or bystanders.

Always secure the machine with at least 2 jack stands when you have the mower deck raised.

Lubrication

Service Interval: Every 50 hours Lubricate the grease fittings immediately after every washing.

The machine has grease fittings that must be lubricated regularly with No. 2 lithium grease.

Lubricate the following areas:

- Caster fork shaft bushings (4) (Figure 15)

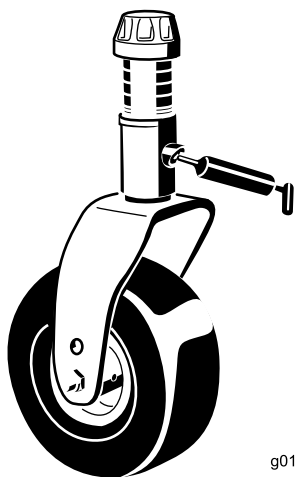


Figure 15

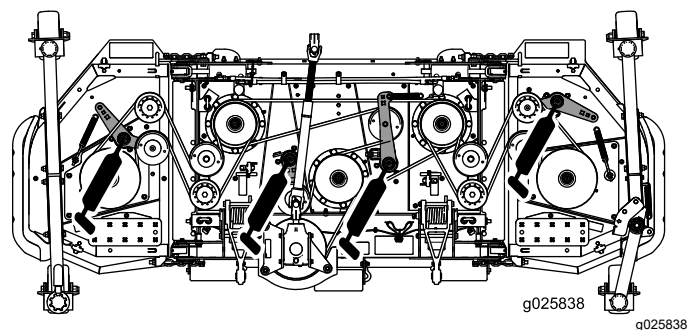


Figure 17

- Wing deck hinges (10) (Figure 18)

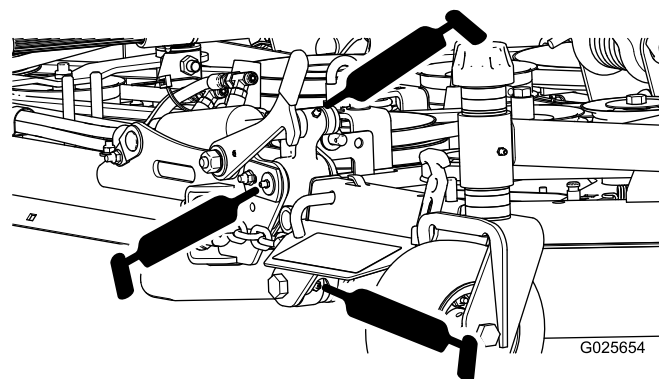


Figure 18

- Deck links (5) (Figure 16)

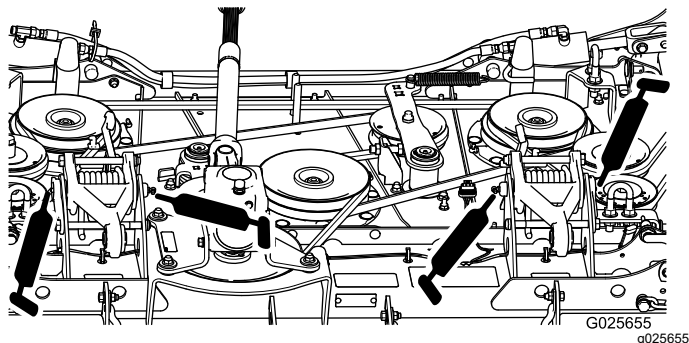


Figure 16

- Folding caster arm pivot (1) (Figure 19)

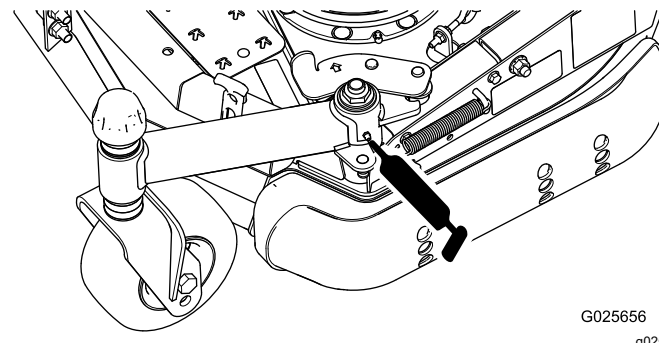


Figure 19

- Idler arm pivots (4) (Figure 17)

- PTO drive shaft (2) (Figure 20)

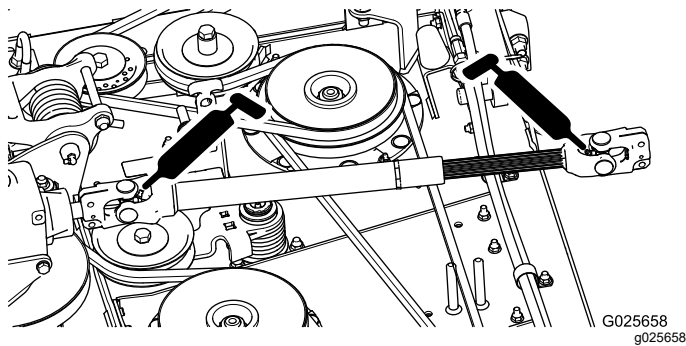


Figure 20

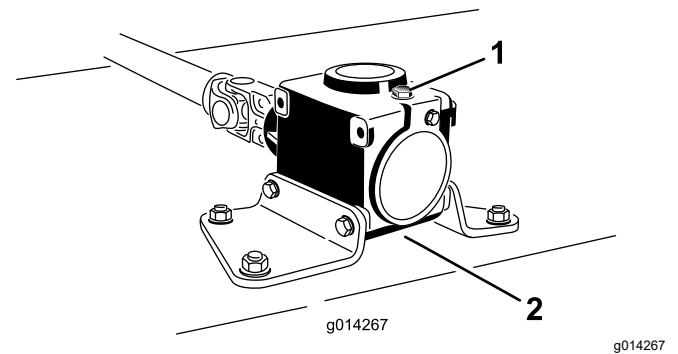


Figure 22

1. Fill plug and dipstick
2. Drain location

- Spindle shaft bearings (5) (Figure 21)

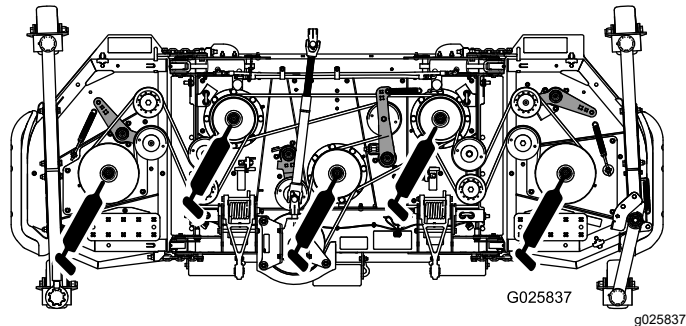


Figure 21

7. If the lubricant level is low, add enough lubricant until the level is between the marks on the dipstick.

Important: Do not overfill the gearbox and operate the mower deck; otherwise, you may damage the gearbox.

Changing the Mower Deck Gearbox Lubricant

Service Interval: After the first 50 hours

Every 400 hours

1. Park the machine and cutting unit on a level surface.
2. Lower the mower deck to the 2.5 cm (1 inch) height of cut.
3. Disengage the PTO, release the traction pedal, and engage the parking brake.
4. Move the throttle lever to the SLOW position, shut off the engine, remove the key, and wait for all moving parts to stop before leaving the operating position.
5. Lift the footrest to expose the top of the mower deck.
6. Remove the dipstick/fill plug from the top of the gearbox (Figure 22).
7. Place a drain pan under the drain plug located under the front of the gearbox and remove the plug, draining the lubricant into the pan.
8. Replace the drain plug.
9. Add enough lubricant, approximately 414 ml (14 fl oz), until the level is between the marks on the dipstick.

Important: Do not overfill the gearbox and operate the mower deck; otherwise, you may damage the gearbox.

Servicing the Mower Deck Gearbox Lubricant

The gearbox is designed to operate with SAE 80W-90 gear lube. Although the gearbox is shipped with lubricant from the factory, check the level before operating the cutting unit for the first time.

Checking the Mower Deck Gearbox Lubricant

Service Interval: Every 150 hours

1. Park the machine on a level surface.
2. Lower the mower deck to the 2.5 cm (1 inch) height of cut.
3. Disengage the PTO, release the traction pedal, and engage the parking brake.
4. Move the throttle lever to the SLOW position, stop the engine, remove the key, and wait for all moving parts to stop before leaving the operating position.
5. Lift the footrest, exposing the top of the mower deck.
6. Remove the dipstick/fill plug from the top of the gearbox (Figure 22) and make sure that the lubricant is between the marks on the dipstick.

Servicing the Belts

The belts, tensioned by the spring loaded idler pulley, are very durable. However, after many hours of use, a belt will show signs of wear. Signs of a worn belt are squealing when belt is rotating, blades slipping when cutting grass, frayed edges, burn marks, and cracks. Replace the belt if any of these conditions occur.

1. Lower the cutting unit to the shop floor. Remove the belt covers from the top of the cutting unit and set the covers aside.
2. Using a socket wrench in the idler-arm holes, move the idler pulley away from the drive belt to release the belt tension and allow the belt to be slipped off pulley (Figure 23).

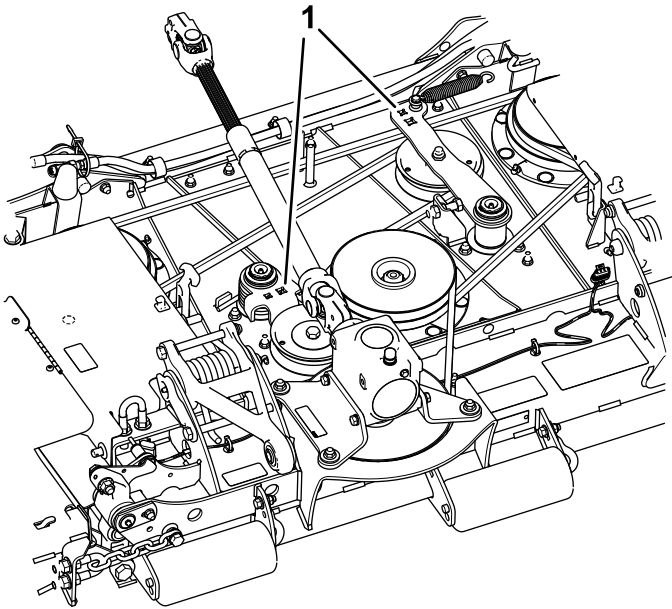


Figure 23

1. Idler-arm holes

3. Remove the old belt from around the pulleys and idler pulley.
4. Route the new belt around the pulleys and idler pulley assembly as shown in Figure 24.
5. Install the belt covers.

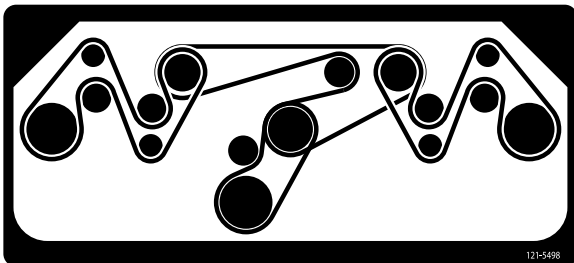


Figure 24
Belt routing

Servicing the Bushings in the Caster Arms

The caster arms have bushings pressed into the top and bottom of the tube and after many hours of operation, the bushings wear. To check the bushings, move the caster fork back and forth and from side to side. If the caster spindle is loose inside the bushings, the bushings are worn; replace them.

1. Raise the cutting unit so that the wheels are off the floor. Block the cutting unit so that it cannot accidentally fall.
2. Remove the tensioning cap, spacer(s), and thrust washer from the top of the caster spindle.
3. Pull the caster spindle out of the mounting tube. Allow the thrust washer and spacer(s) to remain on the bottom of the spindle.
4. Insert a pin punch into the top or bottom of the mounting tube and drive the bushing out of the tube (Figure 25).

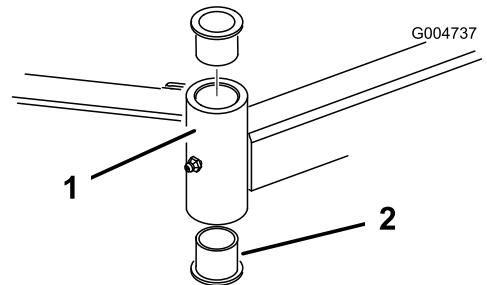


Figure 25

1. Caster arm tube
2. Bushings

5. Drive the other bushing out of the tube.
6. Clean the inside of the tubes to remove any dirt.
7. Apply grease to the inside and outside of the new bushings.
8. Using a hammer and a flat plate, drive the bushings into the mounting tube.
9. Inspect the caster spindle for wear and replace it if it is damaged.
10. Push the caster spindle through the bushings and the mounting tube.
11. Slide the thrust washer and the spacer(s) onto the spindle.
12. Install the tensioning cap on the caster spindle to retain all parts in place.

Servicing the Caster Wheels and Bearings

1. Remove the locknut from the bolt holding the caster wheel assembly between the caster fork (Figure 26).

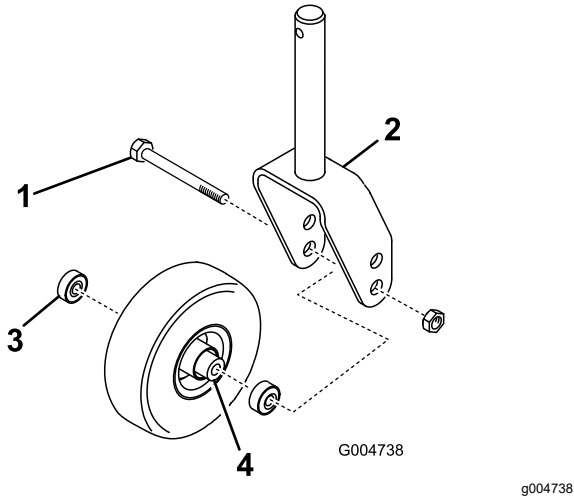


Figure 26

- | | |
|-----------------|-------------------|
| 1. Caster wheel | 3. Bearing (2) |
| 2. Caster fork | 4. Bearing spacer |

2. Grasp the caster wheel and slide the bolt out of the fork or pivot arm.
3. Remove the bearing from the wheel hub and allow the bearing spacer to fall out (Figure 26).
4. Remove the bearing from the opposite side of the wheel hub.
5. Check the bearings, spacer, and inside of the wheel hub for wear. Replace any damaged parts.
6. To assemble the caster wheel, push the bearing into the wheel hub.

Note: When installing the bearings, press on the outer race of the bearing.

7. Slide the bearing spacer into the wheel hub. Push the other bearing into the open end of the wheel hub to captivate the bearing spacer inside the wheel hub.
8. Install the caster wheel assembly between the caster fork and secure it in place with the bolt and locknut.

Servicing the Cutting Blades

Blade Safety

A worn or damaged blade can break, and a piece of the blade could be thrown toward you or bystanders, resulting in serious personal injury or death.

- Inspect the blade periodically for wear or damage.
- Use care when checking the blades. Wrap the blades or wear gloves, and use caution when servicing the blades. Only replace or sharpen the blades; never straighten or weld them.
- On multi-bladed machines, take care as rotating 1 blade can cause other blades to rotate.

Before Inspecting or Servicing the Blades

1. Disengage the PTO, release the traction pedal, and engage the parking brake.
2. Move the throttle lever to the SLOW position, stop the engine, remove the key, and wait for all moving parts to stop before leaving the operating position.

Checking for Bent Blades

1. Disengage the PTO, release the traction pedal and engage the parking brake.
2. Move the throttle lever to the SLOW position, shut off the engine, remove the key, and wait for all moving parts to stop before leaving the operating position.
3. Rotate the blades until the ends face forward and backward (Figure 27).

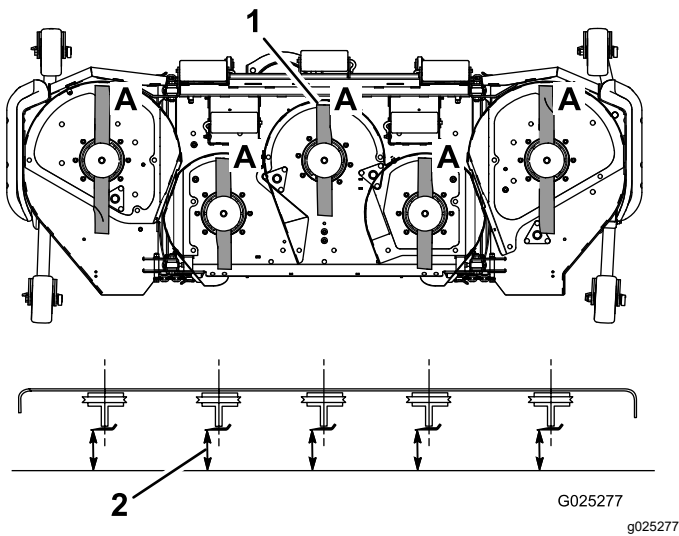


Figure 27

1. Position A
 2. Measure here from blade to hard surface
4. Measure from a level surface to the cutting edge, position **A**, of the blades (Figure 27). Note this dimension.
 5. Rotate the opposite ends of the blades forward.
 6. Measure from a level surface to the cutting edge of the blades at the same position as in step 3 above. The difference between the dimensions obtained in steps 3 and 4 must not exceed 3 mm (1/8 inch). If this dimension exceeds 3 mm (1/8 inch), the blade is bent and must be replaced; refer to [Removing and Installing the Blade\(s\)](#) (page 19).

⚠ WARNING

A blade that is bent or damaged could break apart and could seriously injure or kill you or bystanders.

- Always replace bent or damaged blade with a new blade.
- Never file or create sharp notches in the edges or surfaces of blade.

Removing and Installing the Blade(s)

The blade must be replaced if a solid object is hit, the blade is out-of-balance, worn, or bent. Always use genuine Toro replacement blades to ensure safety and optimum performance. Never use blades made by other manufacturers because they could be dangerous.

1. Raise the cutting unit to the highest position, engage the parking brake, stop the engine, and remove the ignition key. Block the cutting unit to prevent it from accidentally falling.

2. Grasp the end of the blade using a rag or thickly padded glove. Remove the blade bolt, anti-scalp cup, and blade from the spindle shaft (Figure 28).

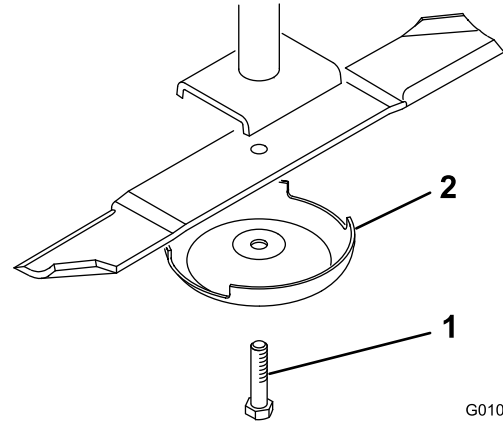


Figure 28

1. Blade bolt
2. Anti-scalp cup

3. Install the blade-sail facing toward the cutting unit-with the anti-scalp cup and blade bolt. Tighten the blade bolt to 115 to 149 N·m (85 to 110 ft·lb).

Important: The curved part of the blade must point toward the inside of the cutting unit to ensure proper cutting.

Inspecting and Sharpening the Blade(s)

Service Interval: Before each use or daily
Every 50 hours

⚠ DANGER

A worn or damaged blade can break, and a piece of the blade could be thrown toward you or bystanders, resulting in serious personal injury or death.

- Inspect the blade periodically for wear or damage.
- Do not try to straighten a blade that is bent.
- Do not weld a broken or cracked blade.
- Replace a worn or damaged blade with a new Toro blade to ensure continued safety certification of the product.

Both cutting edges and the sail, which is the turned up portion opposite the cutting edge, contribute to a good quality-of-cut. The sail is important because it pulls grass up straight, thereby producing an even cut. However, the sail will gradually wear down

during operation, and this condition is normal. As the sail wears down, the quality-of-cut will degrade somewhat, although the cutting edges are sharp. The cutting edge of the blade must be sharp so that the grass is cut rather than torn. A dull cutting edge is evident when the tips of the grass appear brown and shredded. Sharpen the cutting edges to correct this condition.

1. Park the machine on a level surface. Raise the cutting unit, engage the parking brake, put the traction pedal in neutral, put the PTO lever in the OFF position, shut off the engine, and remove the key.
2. Examine the cutting ends of the blade carefully, especially where the flat and curved parts of the blade meet (Figure 29). Since sand and abrasive material can wear away the metal that connects the flat and curved parts of the blade, check the blade before using the machine. If you see wear (Figure 29), replace the blade; refer to [Removing and Installing the Blade\(s\)](#) (page 19).

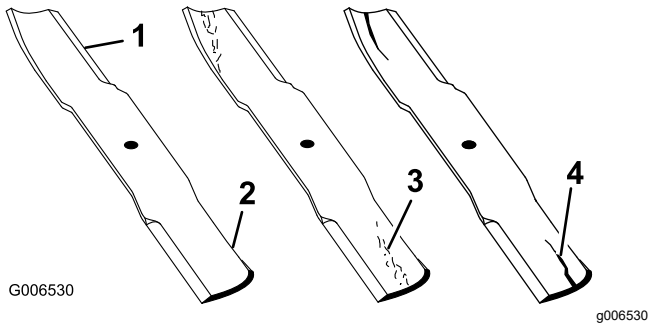


Figure 29

- | | |
|---------------------|----------------------|
| 1. Cutting edge | 3. Wear/slot forming |
| 2. Curved area/sail | 4. Crack |

⚠ WARNING

If the blade is allowed to wear, a slot will form between the sail and flat part of the blade (Figure 29). Eventually, a piece of the blade may break off and be thrown from under the housing, possibly resulting in serious injury to yourself or bystanders.

- Inspect the blade periodically for wear or damage.
 - Replace a worn or damaged blade with a new Toro blade to ensure continued safety certification of the product.
3. Examine the cutting edges of all blades. Sharpen the cutting edges if they are dull or nicked. Sharpen only the top side of the cutting edge and maintain the original cutting angle to

ensure sharpness (Figure 30). The blade will remain balanced if the same amount of metal is removed from both cutting edges.

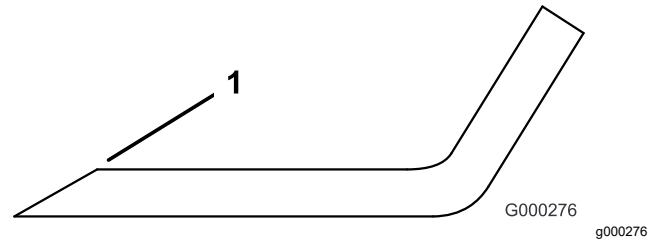


Figure 30

1. Sharpen at original angle

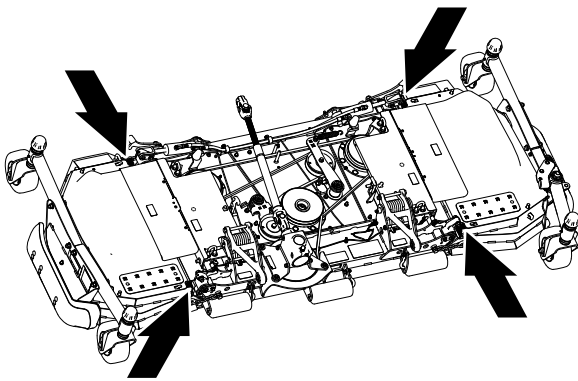
Note: Remove the blades and sharpen them on a grinder; refer to [Removing the Cutting Blades](#). After sharpening the cutting edges, install the blade with the anti-scalp cup and blade bolt. The blade sails must be on top of the blade. Tighten the blade bolt to 115 to 149 N·m (85 to 110 ft-lb).

Adjusting the Deck-Limit Chains

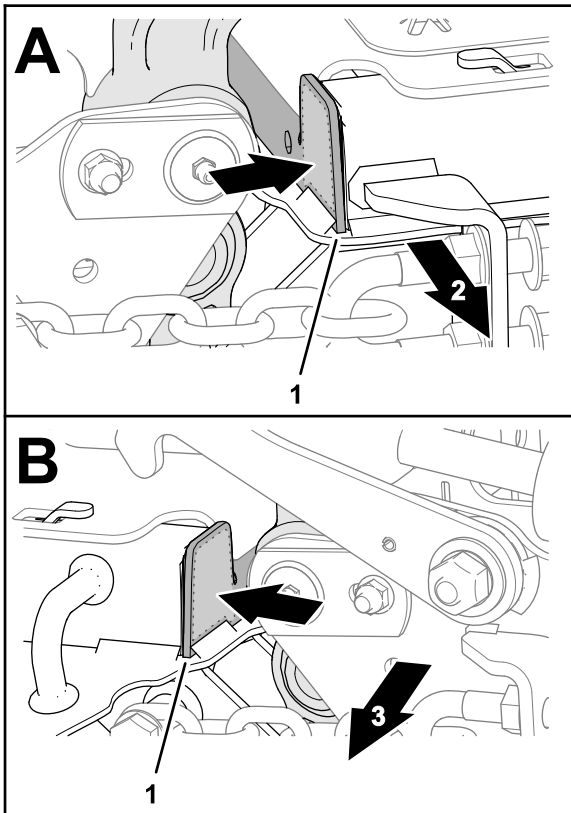
Use 2 deck shims Toro Part No. 138-8243 or 2 feeler gauges—0.15 mm (0.060 inch)

Preparing the Deck

1. Start the engine, lower the left and right decks, shut off the engine, remove the key, and wait for all moving parts to stop.
2. At the outer decks, wipe clean the tab of the inner channel (Figure 31).



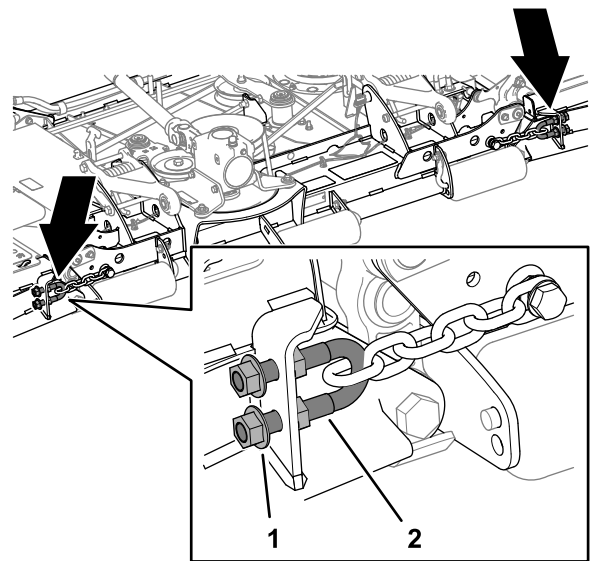
g321242



g321236

Figure 31

1. Tab (inner channel—outer deck)
 2. Front of the machine
 3. Back of the machine deck
-
3. At the front of the deck, fully loosen the outboard serrated-flange nuts securing the 4 U-bolts (Figure 32).

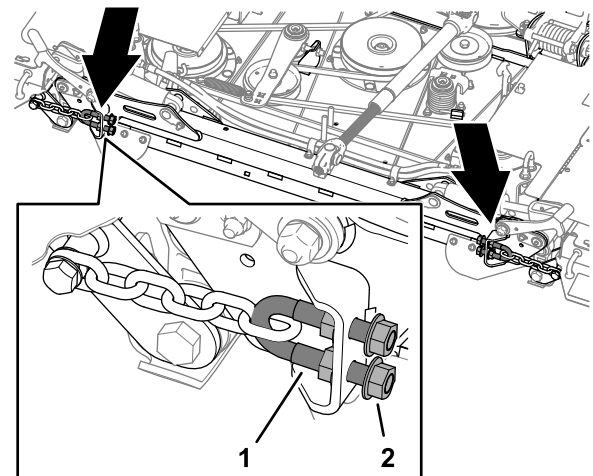


g321237

Figure 32

1. Serrated-flange nut (inboard)
2. U-bolt

-
4. At the back of the deck, fully loosen the inboard serrated-flange nuts securing the 4 U-bolts (Figure 33).



g321238

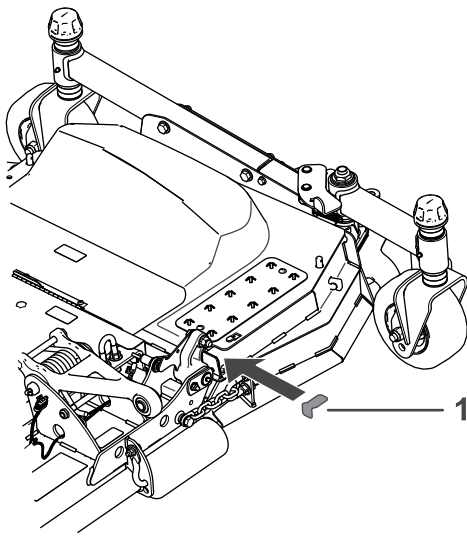
Figure 33

1. U-bolt
2. Serrated-flange nut (outboard)

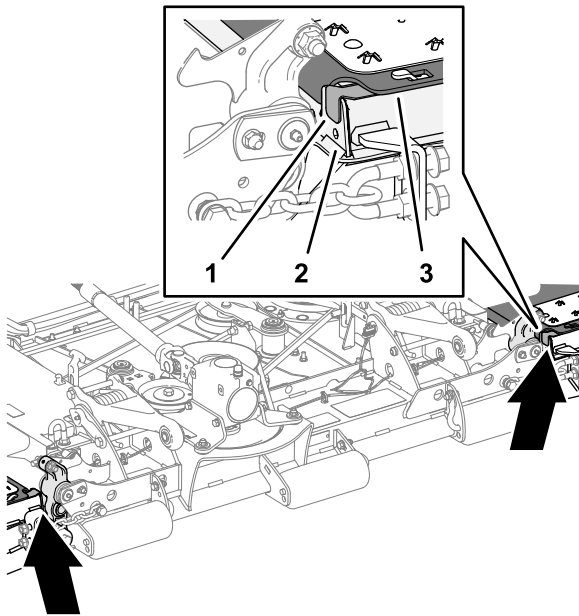
Assembling the Shim to the Deck

1. Install the deck shims at the front of the deck as shown in Figure 34.

Note: Insert the part of the long tab of the shim under the belt cover.



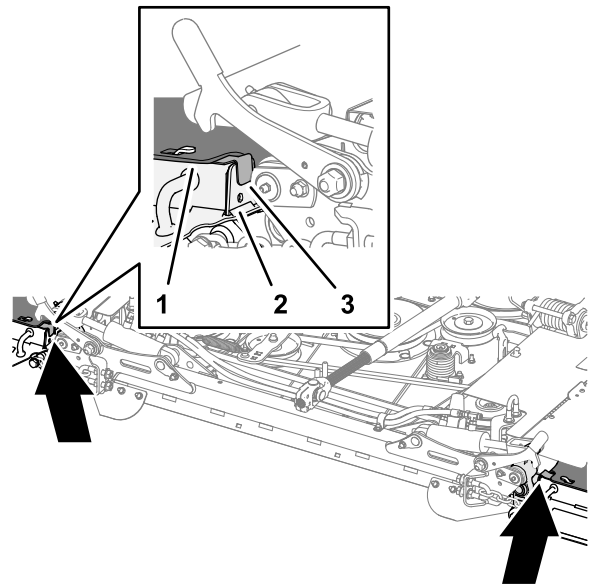
g321246



g321244

Figure 34

1. Deck shim
2. Inner-channel tab (outer deck)
3. Belt cover



g321239

Figure 35

1. Belt cover
2. Inner-channel tab (outer deck)
3. Deck shim

Note: If you are using feeler gauges, use a piece of tape to adhere a feeler gauge—0.15 mm (0.060 inch) to the tab of the inner channel ([Figure 36](#)).

2. Install the deck shims at the front of the deck as shown in [Figure 35](#).

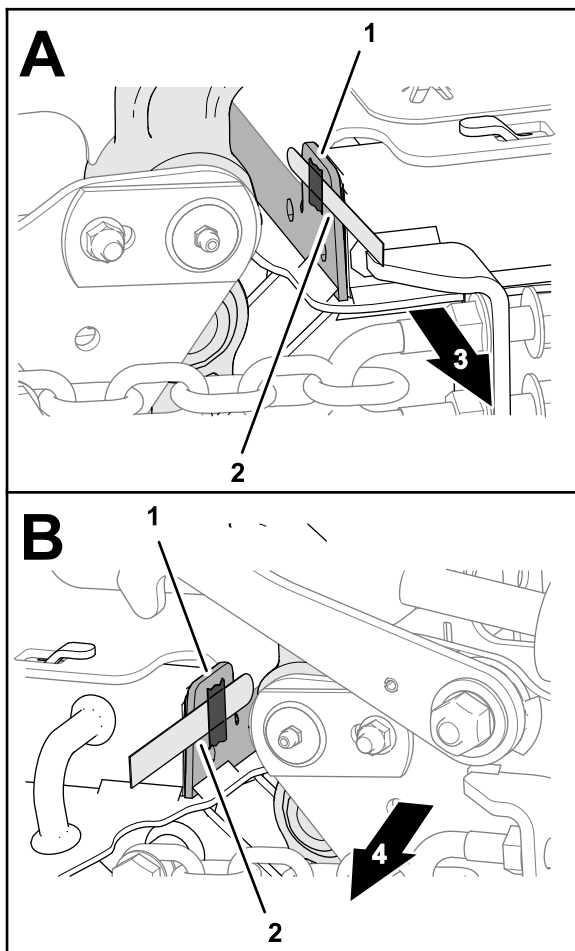


Figure 36

g321243

- | | |
|----------------------|-------------------------|
| 1. Inner-channel tab | 3. Front of the machine |
| 2. Feeler gauge | 4. Back of the machine |

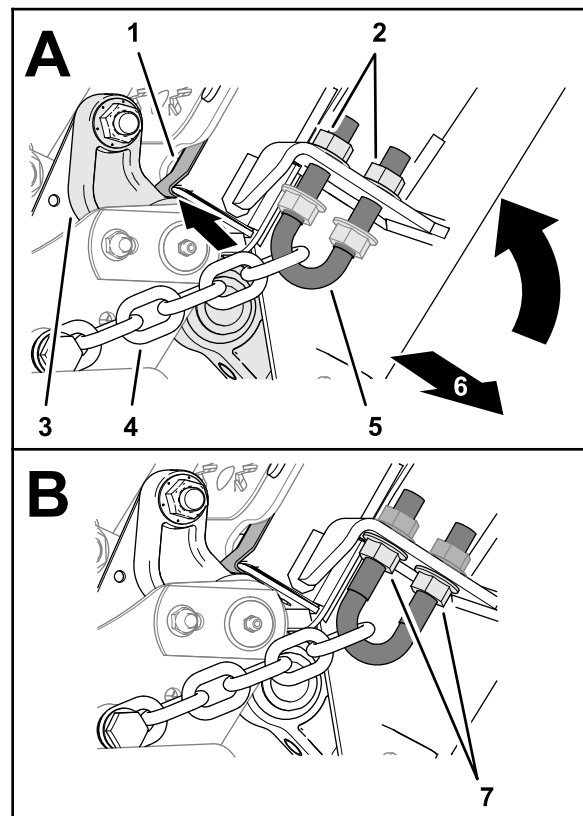
3. Start the engine, fully raise the left and right decks, shut off the engine, remove the key, and wait for all moving parts to stop.

Tensioning the Chains

1. At the front of the deck, tighten the outboard serrated-flange nuts until the chains are tensioned ([Figure 37](#)).

Note: Ensure that the deck shim (or feeler gauge) contacts then pivot link.

Important: Ensure that the upper and lower serrated-flange nut pairs are adjusted evenly.



g321234

Figure 37

- | | |
|-----------------------------------|----------------------------------|
| 1. Deck shim (or feeler gauge) | 5. U-bolt |
| 2. Serrated-flange nut (outboard) | 6. Front of the machine |
| 3. Pivot link | 7. Serrated-flange nut (inboard) |
| 4. Chain (limit) | |

2. Thread the inboard serrated-flange nuts ([Figure 37](#)) and torque them to 103 to 127 N·m (76 to 94 ft-lb).
3. At the back of the deck, tighten the inboard serrated-flange nuts until the chains are tensioned ([Figure 38](#)).

Note: Ensure that the deck shim (or feeler gauge) contacts then pivot link.

Important: Ensure that the upper and lower serrated-flange nut pairs are adjusted evenly.

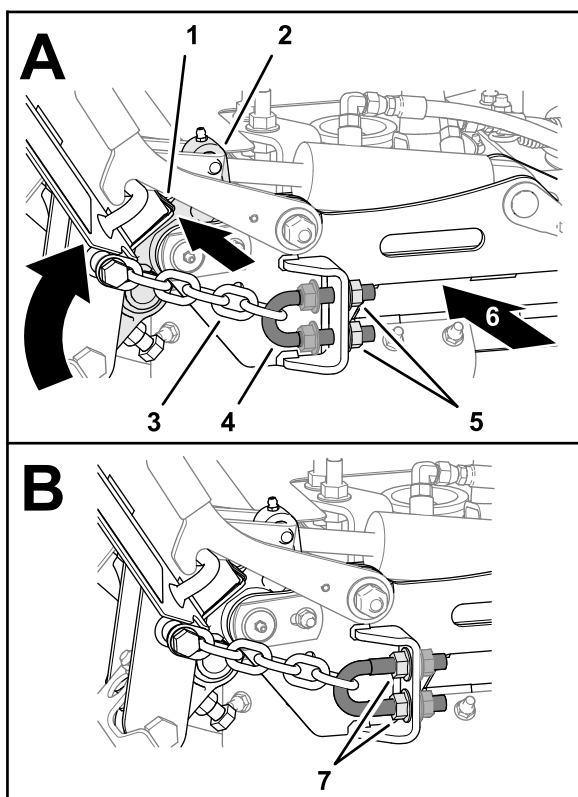


Figure 38

g321235

- | | |
|--------------------------------|-----------------------------------|
| 1. Deck shim (or feeler gauge) | 5. Serrated-flange nut (inboard) |
| 2. Pivot link | 6. Front of the machine |
| 3. Chain (limit) | 7. Serrated-flange nut (outboard) |
| 4. U-bolt | |

4. Thread the outboard serrated-flange nuts ([Figure 38](#)) and torque them to 103 to 127 N·m (76 to 94 ft-lb).
5. Start the engine, lower adjusted deck, raise the other deck, shut off the engine, remove the key, and wait for all moving parts to stop.
6. Remove the shims or feeler gauges ([Figure 39](#)).

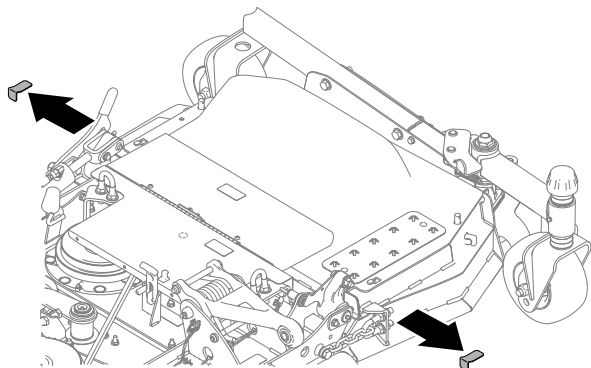


Figure 39

g321240

7. Repeat steps in [Assembling the Shim to the Deck \(page 21\)](#) and [Tensioning the Chains \(page 23\)](#) for the other mower deck.

Cleaning Under the Cutting Unit

Service Interval: After each use

Remove the grass buildup under the cutting unit daily.

1. Disengage the PTO, release the traction pedal to the neutral position, and engage the parking brake.
2. Move the throttle lever to the SLOW position, shut off the engine, remove the key, and wait for all moving parts to stop before leaving the operator's position.
3. Raise the cutting unit to the TRANSPORT position.
4. Use a jack to raise the front of the machine and support it with jack stands.
5. Thoroughly clean the underside of the cutting unit with water.

Storage

1. Disengage the PTO, release the traction pedal to the neutral position, lower the cutting unit, move the throttle lever to the SLOW position, and engage the parking brake.
2. Always shut off the engine, and remove the key. Wait for all movement to stop and allow the machine to cool before adjusting, cleaning, storing, or repairing it.
3. Thoroughly clean the cutting unit, paying special attention to these areas:
 - Underneath the cutting unit
 - Under the cutting unit belt covers
 - PTO shaft assembly
 - All grease fittings and pivot points
4. Check and adjust the traction-unit front and rear tire pressure; refer to the traction-unit *Operator's Manual*.
5. Remove, sharpen, and balance the cutting unit blades. Install the blades and torque the blade fasteners to 85 to 110 ft-lb (115 to 149 N·m).
6. Check all fasteners for looseness and tighten them as necessary.
7. Grease or oil all grease fittings and pivot points. Wipe off any excess lubricant.
8. Lightly sand and use touch up paint on painted areas that are scratched, chipped or rusted. Repair any dents.

Notes:

Notes:

Declaration of Incorporation

The Toro Company, 8111 Lyndale Ave. South, Bloomington, MN, USA declares that the following unit(s) conform(s) to the directives listed, when installed in accordance with the accompanying instructions onto certain Toro models as indicated on the relevant Declarations of Conformity.

Model No.	Serial No.	Product Description	Invoice Description	General Description	Directive
31101	400000000 and Up	100in Rear Discharge Mower	CUTTING UNIT-100 IN, GM360	100in Rear Discharge Mower	2006/42/EC, 2000/14/EC

Relevant technical documentation has been compiled as required per Part B of Annex VII of 2006/42/EC.

We will undertake to transmit, in response to requests by national authorities, relevant information on this partly completed machinery. The method of transmission shall be electronic transmittal.

This machinery shall not be put into service until incorporated into approved Toro models as indicated on the associated Declaration of Conformity and in accordance with all instructions, whereby it can be declared in conformity with all relevant Directives.

Certified:



John Heckel
Engineering Director
8111 Lyndale Ave. South
Bloomington, MN 55420, USA
October 2, 2018

Authorized Representative:

Marcel Dutrieux
Manager European Product Integrity
Toro Europe NV
Nijverheidsstraat 5
2260 Oevel
Belgium

California Proposition 65 Warning Information

What is this warning?

You may see a product for sale that has a warning label like the following:



WARNING: Cancer and Reproductive Harm—www.p65Warnings.ca.gov.

What is Prop 65?

Prop 65 applies to any company operating in California, selling products in California, or manufacturing products that may be sold in or brought into California. It mandates that the Governor of California maintain and publish a list of chemicals known to cause cancer, birth defects, and/or other reproductive harm. The list, which is updated annually, includes hundreds of chemicals found in many everyday items. The purpose of Prop 65 is to inform the public about exposure to these chemicals.

Prop 65 does not ban the sale of products containing these chemicals but instead requires warnings on any product, product packaging, or literature with the product. Moreover, a Prop 65 warning does not mean that a product is in violation of any product safety standards or requirements. In fact, the California government has clarified that a Prop 65 warning "is not the same as a regulatory decision that a product is 'safe' or 'unsafe.'" Many of these chemicals have been used in everyday products for years without documented harm. For more information, go to <https://oag.ca.gov/prop65/faqs-view-all>.

A Prop 65 warning means that a company has either (1) evaluated the exposure and has concluded that it exceeds the "no significant risk level"; or (2) has chosen to provide a warning based on its understanding about the presence of a listed chemical without attempting to evaluate the exposure.

Does this law apply everywhere?

Prop 65 warnings are required under California law only. These warnings are seen throughout California in a wide range of settings, including but not limited to restaurants, grocery stores, hotels, schools, and hospitals, and on a wide variety of products. Additionally, some online and mail order retailers provide Prop 65 warnings on their websites or in catalogs.

How do the California warnings compare to federal limits?

Prop 65 standards are often more stringent than federal and international standards. There are various substances that require a Prop 65 warning at levels that are far lower than federal action limits. For example, the Prop 65 standard for warnings for lead is 0.5 µg/day, which is well below the federal and international standards.

Why don't all similar products carry the warning?

- Products sold in California require Prop 65 labelling while similar products sold elsewhere do not.
- A company involved in a Prop 65 lawsuit reaching a settlement may be required to use Prop 65 warnings for its products, but other companies making similar products may have no such requirement.
- The enforcement of Prop 65 is inconsistent.
- Companies may elect not to provide warnings because they conclude that they are not required to do so under Prop 65; a lack of warnings for a product does not mean that the product is free of listed chemicals at similar levels.

Why does Toro include this warning?

Toro has chosen to provide consumers with as much information as possible so that they can make informed decisions about the products they buy and use. Toro provides warnings in certain cases based on its knowledge of the presence of one or more listed chemicals without evaluating the level of exposure, as not all the listed chemicals provide exposure limit requirements. While the exposure from Toro products may be negligible or well within the "no significant risk" range, out of an abundance of caution, Toro has elected to provide the Prop 65 warnings. Moreover, if Toro does not provide these warnings, it could be sued by the State of California or by private parties seeking to enforce Prop 65 and subject to substantial penalties.

EEA/UK Privacy Notice

Toro's Use of Your Personal Information

The Toro Company ("Toro") respects your privacy. When you purchase our products, we may collect certain personal information about you, either directly from you or through your local Toro company or dealer. Toro uses this information to fulfil contractual obligations - such as to register your warranty, process your warranty claim or to contact you in the event of a product recall - and for legitimate business purposes - such as to gauge customer satisfaction, improve our products or provide you with product information which may be of interest. Toro may share your information with our subsidiaries, affiliates, dealers or other business partners in connection these activities. We may also disclose personal information when required by law or in connection with the sale, purchase or merger of a business. We will never sell your personal information to any other company for marketing purposes.

Retention of your Personal Information

Toro will keep your personal information as long as it is relevant for the above purposes and in accordance with legal requirements. For more information about applicable retention periods please contact legal@toro.com.

Toro's Commitment to Security

Your personal information may be processed in the US or another country which may have less strict data protection laws than your country of residence. Whenever we transfer your information outside of your country of residence, we will take legally required steps to ensure that appropriate safeguards are in place to protect your information and to make sure it is treated securely.

Access and Correction

You may have the right to correct or review your personal data, or object to or restrict the processing of your data. To do so, please contact us by email at legal@toro.com. If you have concerns about the way in which Toro has handled your information, we encourage you to raise this directly with us. Please note that European residents have the right to complain to your Data Protection Authority.



The Toro Warranty

A Two-Year Limited Warranty

Conditions and Products Covered

The Toro Company and its affiliate, Toro Warranty Company, pursuant to an agreement between them, jointly warrant your Toro Commercial product ("Product") to be free from defects in materials or workmanship for two years or 1500 operational hours*, whichever occurs first. This warranty is applicable to all products with the exception of Aerators (refer to separate warranty statements for these products). Where a warrantable condition exists, we will repair the Product at no cost to you including diagnostics, labor, parts, and transportation. This warranty begins on the date the Product is delivered to the original retail purchaser.

* Product equipped with an hour meter.

Instructions for Obtaining Warranty Service

You are responsible for notifying the Commercial Products Distributor or Authorized Commercial Products Dealer from whom you purchased the Product as soon as you believe a warrantable condition exists. If you need help locating a Commercial Products Distributor or Authorized Dealer, or if you have questions regarding your warranty rights or responsibilities, you may contact us at:

Toro Commercial Products Service Department
Toro Warranty Company
8111 Lyndale Avenue South
Bloomington, MN 55420-1196

952-888-8801 or 800-952-2740
E-mail: commercial.warranty@toro.com

Owner Responsibilities

As the Product owner, you are responsible for required maintenance and adjustments stated in your *Operator's Manual*. Failure to perform required maintenance and adjustments can be grounds for disallowing a warranty claim.

Items and Conditions Not Covered

Not all product failures or malfunctions that occur during the warranty period are defects in materials or workmanship. This warranty does not cover the following:

- Product failures which result from the use of non-Toro replacement parts, or from installation and use of add-on, or modified non-Toro branded accessories and products. A separate warranty may be provided by the manufacturer of these items.
- Product failures which result from failure to perform recommended maintenance and/or adjustments. Failure to properly maintain your Toro product per the Recommended Maintenance listed in the *Operator's Manual* can result in claims for warranty being denied.
- Product failures which result from operating the Product in an abusive, negligent, or reckless manner.
- Parts subject to consumption through use unless found to be defective. Examples of parts which are consumed, or used up, during normal Product operation include, but are not limited to, brake pads and linings, clutch linings, blades, reels, rollers and bearings (sealed or greasable), bed knives, spark plugs, castor wheels and bearings, tires, filters, belts, and certain sprayer components such as diaphragms, nozzles, and check valves, etc.
- Failures caused by outside influence. Conditions considered to be outside influence include, but are not limited to, weather, storage practices, contamination, use of unapproved fuels, coolants, lubricants, additives, fertilizers, water, or chemicals, etc.
- Failure or performance issues due to the use of fuels (e.g. gasoline, diesel, or biodiesel) that do not conform to their respective industry standards.

- Normal noise, vibration, wear and tear, and deterioration.
- Normal "wear and tear" includes, but is not limited to, damage to seats due to wear or abrasion, worn painted surfaces, scratched decals or windows, etc.

Parts

Parts scheduled for replacement as required maintenance are warranted for the period of time up to the scheduled replacement time for that part. Parts replaced under this warranty are covered for the duration of the original product warranty and become the property of Toro. Toro will make the final decision whether to repair any existing part or assembly or replace it. Toro may use remanufactured parts for warranty repairs.

Deep Cycle and Lithium-Ion Battery Warranty:

Deep cycle and Lithium-Ion batteries have a specified total number of kilowatt-hours they can deliver during their lifetime. Operating, recharging, and maintenance techniques can extend or reduce total battery life. As the batteries in this product are consumed, the amount of useful work between charging intervals will slowly decrease until the battery is completely worn out. Replacement of worn out batteries, due to normal consumption, is the responsibility of the product owner. Battery replacement may be required during the normal product warranty period at owner's expense. Note: (Lithium-Ion battery only): A Lithium-Ion battery has a part only prorated warranty beginning year 3 through year 5 based on the time in service and kilowatt hours used. Refer to the *Operator's Manual* for additional information.

Maintenance is at Owner's Expense

Engine tune-up, lubrication, cleaning and polishing, replacement of filters, coolant, and completing recommended maintenance are some of the normal services Toro products require that are at the owner's expense.

General Conditions

Repair by an Authorized Toro Distributor or Dealer is your sole remedy under this warranty.

Neither The Toro Company nor Toro Warranty Company is liable for indirect, incidental or consequential damages in connection with the use of the Toro Products covered by this warranty, including any cost or expense of providing substitute equipment or service during reasonable periods of malfunction or non-use pending completion of repairs under this warranty. Except for the Emissions warranty referenced below, if applicable, there is no other express warranty. All implied warranties of merchantability and fitness for use are limited to the duration of this express warranty.

Some states do not allow exclusions of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the above exclusions and limitations may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Note regarding engine warranty:

The Emissions Control System on your Product may be covered by a separate warranty meeting requirements established by the U.S. Environmental Protection Agency (EPA) and/or the California Air Resources Board (CARB). The hour limitations set forth above do not apply to the Emissions Control System Warranty. Refer to the Engine Emission Control Warranty Statement supplied with your product or contained in the engine manufacturer's documentation for details.

Countries Other than the United States or Canada

Customers who have purchased Toro products exported from the United States or Canada should contact their Toro Distributor (Dealer) to obtain guarantee policies for your country, province, or state. If for any reason you are dissatisfied with your Distributor's service or have difficulty obtaining guarantee information, contact the Toro importer.



Count on it.